

ELECTRONICALLY PROGRAMMABLE AN- TIFUSE AND CIRCUITS MADE THEREWITH

Abstract

An antifuse device (120) that includes a bias element (124) and an programmable antifuse element (128) arranged in series with one another so as to form a voltage divider having an output node (F) located between the bias and antifuse elements. When the antifuse device is in its unprogrammed state, each of the bias element and antifuse element is non-conductive. When the antifuse device is in its programmed state, the bias element remains non-conductive, but the antifuse element is conductive. The difference in the resistance of the antifuse element between its unprogrammed state and programmed state causes the difference in voltages seen at the output node to be on the order of hundreds of milli-volts when a voltage of 1 V is applied across the antifuse device. This voltage difference is so high that it can be readily sensed using a simple sensing circuit (228).